# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/002,333 | 11/14/2001 | David Emerson | 42390.P12368 | 3313 |

| | | EXAMINER |
|---|---|---|
| 7590 | 10/17/2006 | NGUYEN, PHUONGCHAU BA |

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| ART UNIT | PAPER NUMBER |
|---|---|
| 2616 | |

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>02 August 2006</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>1-16</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>14 November 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## Claim Rejections - 35 USC § 102

1.    The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.    Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by

Sugar (US 2002/0061031 A1).

**Regarding claim 1:**

Sugar discloses System and Methods for Interference Mitigation among Multiple

WLAN Protocol.  According to Sugar, Asynchronous Connectionless (ACL) carries

asynchronous data (e.g., for file transfer).  ACL packets are 1, 3 or 5 slots in duration.

*identifying data for transmission* (a Multiple Protocol Communication Device-

MPD functions as a Bluetooth master to exchange data with other slave terminals.  The

MPD identifies data with a largest multi-slot packet (1, 3 or 5 slots) for transmission in order to achieve the highest throughput efficiency, see 0082, 0092-0094);

*determining how many time-slots are available for the transmission* (the MPD transmits 5-slot ACL packet in the 5-slots duration of the even-numbered timeslots that are the available timeslots for downlink data transmission to the slaves, see 0079 & 0093-0094); *and*

*identifying a data packet from the identified data packets types (1, 3 or 5 slots packet-type) to transmit a portion of the data* (if a 5-slot packet, for achieving the highest throughput efficiency, cannot be found, a single or a triple slot packets are considered as portion of the ACL data to be transmitted, see 0093-0095).

*selecting, from the identified data packets types (1, 3 or 5 slots packet-type), a data packet to transmit a portion of the data in accordance with characteristic of the transmission* (see 0093-0095)

**Regarding claim 2:**

Sugar further discloses *the identifying the data packet includes identifying a data packet type* (a largest multi-slot packet) *from the identified data packets types (1, 3 or 5 slots packet-type) which can be transmitted in a largest portion of the data within the time-slots available* (even-numbered downlink slots) (the MPD identifies the largest

multi-slot packet (1, 3 or 5 slots) for transmission in even-numbered downlink timeslots to achieve the highest throughput efficiency, see 0094).

**Regarding claim 3:**

Sugar further discloses *wherein the data includes at least a minimum amount of data required by the data packet type* (if a largest multi-slot packet, 5-slot packet, for achieving the highest throughput efficiency, cannot be found, a single or a triple slot packets are considered as a minimum amount of the ACL data in order to be transmitted, see 0093-0095).

**Regarding claim 4:**

Sugar further discloses *identifying a data packet type* (a largest or shortest multi-slot packet) *from the identified data packets types (1, 3 or 5 slots packet-type of* ACL data packets) *to transmit all the data* (if the largest multi-slot packet (5 slots) found, the largest multi-slot packet of ACL data packets is transmitted by the MPD, and if the largest multi-slot packet is not found, a shortest multi-slot packet known as a single or a triple slot packets of the ACL data packets will be transmitted, see 0093-0095 &0141-0143).

**Regarding claim 7:**

In Sugar, MPD 12-fig.2 is a laptop computer augmented with the appropriate hardware and/or software, in which the hardware should include a memory for storing instructions to perform various steps. In other words, Sugar's software product stored on a processor readable memory causes the processor to perform the below steps, see 0039 & 0046 (corresponding to *a computer-readable medium having stored thereon a set of instructions to translate instructions, the set of instructions, which when executed by a processor, cause the processor to perform a method comprising*)

*identifying data for transmission* (a Multiple Protocol Communication Device-MPD functions as a Bluetooth master to exchange data with other slave terminals. The MPD identifies data with a largest multi-slot packet (1, 3 or 5 slots) for transmission in order to achieve the highest throughput efficiency, see 0082, 0092-0094);

*determining how many time-slots are available for the transmission* (the MPD transmits 5-slot ACL packet in the 5-slots duration of the even-numbered timeslots that are the available timeslots for downlink data transmission to the slaves from the MPD, see 0079 & 0093-0094); *and*

*identifying a data packet from a plurality of data packets types (1, 3 or 5 slots packet-type) to transmit a portion of the data* (if a 5-slot packet, for achieving the highest throughput efficiency, cannot be found, a single or a triple slot packets are considered as portion of the ACL data to be transmitted, see 0093-0095).

*selecting, from the identified data packets types (1, 3 or 5 slots packet-type), a*

*data packet type to transmit a portion of the data in accordance with characteristic of the*

*transmission* (see 0093-0095)

**Regarding claim 8:**

Sugar's processor readable memory causes the processor to perform the below

step, *wherein the identifying the data packet includes identifying a data packet type* (a

largest multi-slot packet) *from the identified data packets types (1, 3 or 5 slots packet-*

*type) which can be transmit*ted in *a largest portion of the data within the time-slots*

*available* (even-numbered downlink slots) (the MPD identifies the largest multi-slot

packet (5 slots) for transmission in even-numbered downlink timeslots to achieve the

highest throughput efficiency, see 0094).

**Regarding claim 9:**

Sugar's processor readable memory causes the process to perform the below

step, *wherein the data includes at least a minimum amount of data required by the data*

*packet type* (if a largest multi-slot packet, 5-slot packet, for achieving the highest

throughput efficiency, cannot be found, a single or a triple slot packets are considered

as a minimum amount of the ACL data in order to be transmitted, see 0093-0095).

**Regarding claim 10:**

Sugar's processor readable memory causes the process to perform the below

step for *identifying a data packet type* (a largest or shortest multi-slot packet) *from a*

*plurality of data packets types (1, 3 or 5 slots packet-type of* ACL data packets) *to*

*transmit all the data* (if the largest multi-slot packet (5 slots) found, the largest multi-slot

packet of ACL data packets is transmitted by the MPD, and if the largest multi-slot

packet is not found, a shortest multi-slot packet known as a single or a triple slot

packets of the ACL data packets will be transmitted, see 0093-0095 &0141-0143).

**Regarding claim 13:**

In Sugar, MPD 12-fig.2 is a laptop computer augmented with the appropriate

hardware and/or software, in which the hardware should include a memory for storing

instructions to perform various algorithms (*programmable modules*).  In other words,

Sugar's software product stored on a processor readable memory causes the processor

to perform the below steps, see 0039 & 0046 (corresponding to *a computer-readable*

*medium having stored thereon a set of instructions to translate instructions, the set of*

*instructions, which when executed by a processor, cause the processor to perform a*

*method comprising*)

(1) *identifying data for transmission* (a Multiple Protocol Communication Device-

MPD functions as a Bluetooth master to exchange data with other slave terminals.  The

MPD identifies data with a largest multi-slot packet (1, 3 or 5 slots) for transmission in order to achieve the highest throughput efficiency, see 0082, 0092-0094);

(2) *determining how many time-slots are available for the transmission* (the MPD transmits 5-slot ACL packet in the 5-slots duration of the even-numbered timeslots that are the available timeslots for downlink data transmission to the slaves from the MPD, see 0079 & 0093-0094); *and*

(3) *identifying a plurality of data packets types (1, 3 or 5 slots packet-type) that fit into the available time slots, and to select, from the identified data packets types (1, 3 or 5 slots packet-type), a data packet type to transmit a portion of the data* (if a 5-slot packet, for achieving the highest throughput efficiency, cannot be found, a single or a triple slot packets are considered as portion of the ACL data to be transmitted, see 0093-0095).

**Regarding claim 14:**

Sugar further discloses MPD 12-fig.1 is a Bluetooth master device functioning as a hub or router to transmit data packets to slaves, see 0039 (corresponding to *wherein the computing system includes a computer network router*).

**Regarding claims 5, 11, and 15:**

As to claim 5, Sugar discloses the step of identifying the data packet that

includes identifying a data packet from the identified data packets *types (1, 3*

*or 5 slots packet-type)* which is least error prone packets (Sugar, page 5,

paragraph 0059, wherein Sugar determines the bit error rate (BER.) of each

packet to be transmitted. The packet with lowest BER will be least error prone).

As to claims 11 and 15, claims 11 and 15 recite substantially similar

limitations and are similarly analyzed.

**Regarding claim 6,**

Sugar discloses a method comprising:

*identifying data for transmission* (a Multiple Protocol Communication Device-

MPD functions as a Bluetooth master to exchange data with other slave terminals. The

MPD identifies data with a largest multi-slot packet (1, 3 or 5 slots) for transmission in

order to achieve the highest throughput efficiency, see 0082, 0092-0094);

*determining how many time-slots are available for the transmission* (the MPD

transmits 5-slot ACL packet in the 5-slots duration of the even-numbered timeslots that

are the available timeslots for downlink data transmission to the slaves, see 0079 &

0093-0094); *and*

*identifying a plurality of data packet that fit into the available time-slots and can*

*be transmitted in a transmitter logic lower power mode* (if a 5-slot packet, for achieving

the highest throughput efficiency, cannot be found, a single or a triple slot packets are

considered as portion of the ACL data to be transmitted, see 0093-0095, wherein 0096

disclosed that the transmission of MPD preventing the received signal energy reflected

from the transmitted BT signal from interfering with the 802.11 receiver, thus the packet

was selected for transmitting at a lower level power in order to prevent interference with

the 802.11 receiver, see also 0092); *and*

*selecting, from the identified data packet types, a data packet type to transmit a*

*portion of the data in accordance with characteristics of the transmission (after knowing*

*that the packets available for transmitting only fit into the 3 slots instead of 5 slots, the 3*

*slots would be selected for transmission, thus the number of packet available for*

*transmission determining the type of slots for transmitting-emphasis added, see 0093-*

*0095).*

**Regarding claim 12,**

In Sugar, MPD 12-fig.2 is a laptop computer augmented with the appropriate

hardware and/or software, in which the hardware should include a memory for storing

instructions to perform various steps. In other words, Sugar's software product stored

on a processor readable memory causes the processor to perform the below steps, see

0039 & 0046 (corresponding to *a computer-readable medium having stored thereon a*

*set of instructions, which when executed by a processor, cause the processor to*

*perform a method comprising)*

*identifying data for transmission* (a Multiple Protocol Communication Device-

MPD functions as a Bluetooth master to exchange data with other slave terminals. The

MPD identifies data with a largest multi-slot packet (1, 3 or 5 slots) for transmission in

order to achieve the highest throughput efficiency, see 0082, 0092-0094);

*determining how many time-slots are available for the transmission* (the MPD

transmits 5-slot ACL packet in the 5-slots duration of the even-numbered timeslots that

are the available timeslots for downlink data transmission to the slaves from the MPD,

see 0079 & 0093-0094); *and*

*identifying a plurality of data packets that fit into the available time-slots and can*

*be transmitted in a transmitter logic lower power mode* (if a 5-slot packet, for achieving

the highest throughput efficiency, cannot be found, a single or a triple slot packets are

considered as portion of the ACL data to be transmitted, see 0093-0095, wherein 0096

disclosed that the transmission of MPD preventing the received signal energy reflected

from the transmitted BT signal from interfering with the 802.11 receiver, thus the packet

was selected for transmitting at a lower level power in order to prevent interference with

the 802.11 receiver, see also 0092); and

selecting, from the identified data packet types, a data packet type to transmit a

portion of the data in accordance with characteristics of the transmission (after knowing

that the packets available for transmitting only fit into the 3 slots instead of 5 slots, the 3

slots would be selected for transmission, thus the number of packet available for

transmission determining the type of slots for transmitting-emphasis added, see 0093-

0095).

**Regarding claim 16,**

In Sugar, MPD 12-fig.2 is a laptop computer augmented with the appropriate

hardware and/or software, in which the hardware should include a memory for storing

instructions to perform various algorithms (*programmable modules*). In other words,

Sugar's software product stored on a processor readable memory causes the processor

to perform the below steps, see 0039 & 004616 (corresponding to *a computing system

comprising*):

*identifying data for transmission* (a Multiple Protocol Communication Device-

MPD functions as a Bluetooth master to exchange data with other slave terminals. The

MPD identifies data with a largest multi-slot packet (1, 3 or 5 slots) for transmission in

order to achieve the highest throughput efficiency, see 0082, 0092-0094);

*determining how many time-slots are available for the transmission* (the MPD

transmits 5-slot ACL packet in the 5-slots duration of the even-numbered timeslots that

are the available timeslots for downlink data transmission to the slaves from the MPD,
see 0079 & 0093-0094); *and*

*identifying a plurality of data packets that fit into the available time-slots and can*

*be transmitted in a transmitter logic lower power mode* (if a 5-slot packet, for achieving

the highest throughput efficiency, cannot be found, a single or a triple slot packets are

considered as portion of the ACL data to be transmitted, see 0093-0095, wherein 0096

disclosed that the transmission of MPD preventing the received signal energy reflected

from the transmitted BT signal from interfering with the 802.11 receiver, thus the packet

was selected for transmitting at a lower level power in order to prevent interference with

the 802.11 receiver, see also 0092); *and*

*selecting, from the identified data packet types, a data packet type to transmit a*

*portion of the data in accordance with characteristics of the transmission (after knowing*

*that the packets available for transmitting only fit into the 3 slots instead of 5 slots, the 3*

*slots would be selected for transmission, thus the number of packet available for*

*transmission determining the type of slots for transmitting-emphasis added, see 0093-*

*0095).*

3.    Claims 5, 11, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by

Mansfield (US 6,704,346).

Mansfield discloses identifying data for transmission, determining how many time

slots are available and identifying a plurality of data packets that fit into the available

time-slots and are of a data packet type, See col. 6, lines 29-36, which is least prone to

a transmission error (DMI instead of DH1 packet usage), See col.15, lines 11-50. Note:

The claim merely states that the packet least prone to error is identified. In Bluetooth,

DM and DH identification is inherent (FEC and without FEC respectively).


## Response to Arguments

4.    Applicant's arguments filed 1-10-6 have been fully considered but they

are not persuasive.

A/. Applicant argued that Sugar starts with having packets of specific

type in the queue and their type does not need to be identified or selected.

In reply, Applicant admitted that Sugar allowed the MPD to use 5-slot

packets to achieve the highest throughput efficiency.  And if less than 5 packets

are available the MPD transmits single or triple-slot packets. Thus, the 5-slot

packet type met a number of timeslots available, only the packets that were

identified in the slot availability would be accepted (i.e., 1, 3 or 5 slots packet

types; page 7, 0082). Normally, 5-slot packets would be used for transmission,

but upon the determining of the characteristics of the transmission, only 3-slot

packets would be transmitted, thus identifying 3-slots in duration for

transmission, emphasis added.

B/. Applicant argued regarding claims 5, 11 and 15, that Mansfield fails

to teach "identifying a data packet type from a plurality of data packet types

which is least prone to a transmission error."

In reply, in Sugar by transmitting MPD preventing signal energy reflected

from the transmitted BT signal from interfering with the 802.11 receiver, see

0096. Also, by selecting the largest multi-slot packet (1, 3 or 5 slots type) to

satisfy the condition of network would produce a least error transmission of

packets, see 0094-0096.

Also, in Mansfield the DM1 Packet incorporates FEC protection was

chosen for transmitting because it has higher probability of successful

transmission in a bad channel frequency than a DH1 packet, which has no FEC

protection. An FEC scheme allows a limited number of errors in a packet's

transmission to be recovered without need for retransmission, see column 15,

lines 4-37. Mansfield discloses that if a legacy device only has enough data to

fill a DH1 packet, it would use a DH1 packet, column 6, lines 29-36, thus the

identified packet type being transmitted accordance to the available packet for

transmission.

5.    **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the

advisory action is not mailed until after the end of the THREE-MONTH

shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

no event, however, will the statutory period for reply expire later than SIX

MONTHS from the mailing date of this final action.


6.      Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Phuongchau Ba Nguyen whose

telephone number is 571-272-3148.  The examiner can normally be reached

on Monday-Friday from 10:00 a.m. to 2:00 p.m..

        If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Doris To can be reached on 571-272-7629.  The fax

phone number for the organization where this application or proceeding is

assigned is 703-872-9306.

        Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system.  Status information

for published applications may be obtained from either Private PAIR or Public

PAIR.  Status information for unpublished applications is available through

Private PAIR only.  For more information about the PAIR system, see

http://pair-direct.uspto.gov. Should you have questions on access to the

Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-
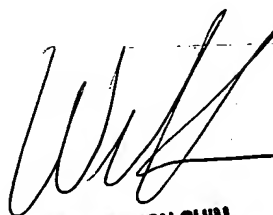
9197 (toll-free).

Phuongchau Ba Nguyen
Examiner
Art Unit 2616

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER